GE Power & Water
Water & Process Technologies

Fact Sheet

AK HR Series

High Rejection Low Energy Brackish Water RO Elements

The A-Series proprietary thin-film reverse osmosis membrane elements are characterized by high flux and high sodium chloride rejection. AK HR low pressure brackish elements are selected when high rejection and low operating pressures are desired. These elements allow significant energy savings since good rejection is achieved at operating pressures as low as 100 psig (689 kPa).

These elements are recommended for low brackish water with salt concentration (TDS) levels up to 5,000mg/l. In turn, AK HR elements produce a permeate quality close to a standard brackish membrane element at a much lower pressure.

Table 1: Element Specification

Membrane	Thin-film membrane (TFM*)

Model	Average permeate flow gpd (m3/day)[1,2]	Average NaCl rejection[1,2]	Minimum NaCl rejection[1,2]
AK-90	2200 (8.3)	99.5%	99.0%
AK-365	9600 (36.3)	99.5%	99.0%
AK-400	10500 (39.7)	99.5%	99.0%
AK-440	11500 (43.5)	99.5%	99.0%
AK-1600	42000 (159.0)	99.5%	99.0%

[1]Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.
[2]Testing conditions: 500ppm NaCl solution at 115psi (862kPa) operating pressure, 77°F (25°C), pH7.5 and 15% recovery.

Model	Active area ft² (m²)	Outer wrap	Part number
AK-90	90 (8.4)	Fiberglass	3056678
AK-365	365 (33.9)	Fiberglass	3056679
AK-400	400 (37.2)	Fiberglass	3056680
AK-440	440 (40.9)	Fiberglass	3056681
AK-1600	1600 (148.6)	Fiberglass	3056682

Table 2: Operating and CIP parameters

Typical Operating Pressure	120 psi (830 kPa)
Typical Operating Flux	10-20GFD (15-35LMH)
Maximum Operating Pressure	400 psi (2,758 kPa)
Maximum Temperature	Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C)
pH range	Optimum rejection pH: 7.0-7.5, Continuous operation: 4.0-11.0, Clean-In-Place (CIP): 2.0-11.5
Maximum Pressure Drop	Over an element: 12 psi (83 kPa) Per housing: 50 psi (345 kPa)
Chlorine Tolerance	1,000+ ppm-hours, dechlorination recommended
Feedwater[3]	NTU < 1 SDI < 5

[3]SDI is measured on a non-linear scale using a 0.45 micron filter paper. Additionally, finer colloids, particulates and microorganisms that pass through the filter paper and not measured in the SDI test, will potentially foul the RO element. For performance consistency and project warranty, please use Winflows projection software and consult your Filters with Membranes representative.

Figure 1a: Element Dimensions Diagram – Male

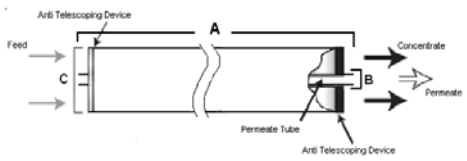

Figure 1b: Element Dimensions Diagram – Female

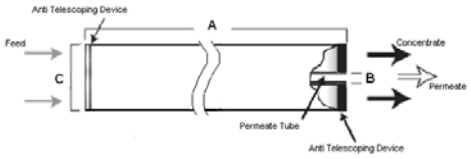

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Table 3: Dimensions and Weights

Model[1]	Type	Dimensions, inches (cm)			Boxed
		A	B[2]	C	Weight lbs (kg)
AK-90	Male	40.0 (101.6)	0.75 (1.90)	3.9 (9.9)	9 (4)
AK-365	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)
AK-400	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)
AK-440	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)
AK-1600	Female	40.0 (101.6)	3.000 (7.620)	16.0 (40.6)	120 (54)